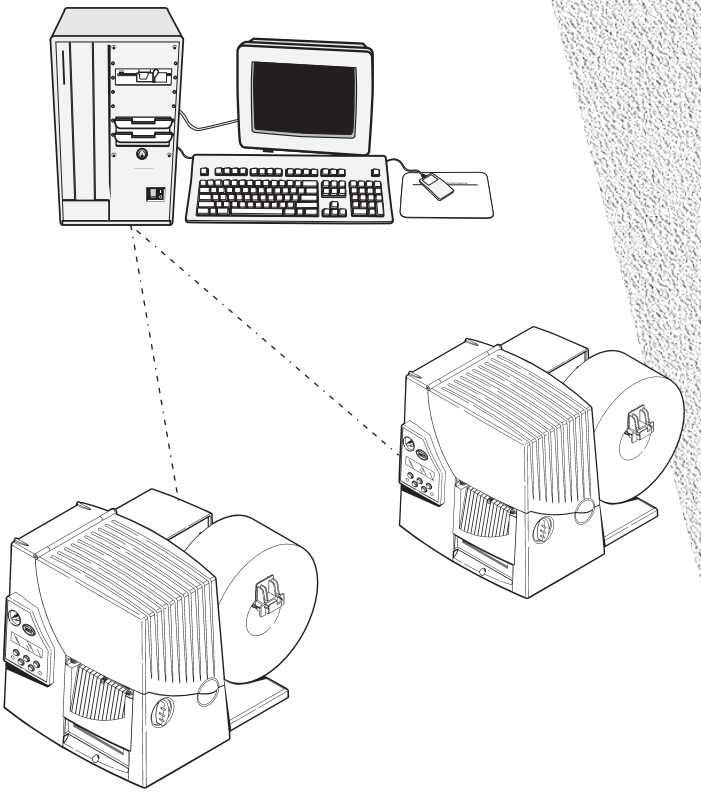
PaxarNet 802.11b Wired/Wireless 7410™ Print Server

Operating Instructions



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Monarch®
Printers

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Regulatory Compliance

Paxar RF products are designed to be compliant with the rules and regulations in the locations into which they are sold and will be labeled as required. The majority of Paxar RF devices are type approved and do not require the user to obtain license or authorization before using the equipment. Any changes or modifications to Paxar equipment not expressly approved by Paxar could void the user authority to operate the equipment.

FCC RF Exposure Guidelines

To comply with FCC exposure requirements, antennas that are mounted externally at remote locations or operating near users at stand-alone desktop of similar configurations must operate with a minimum separation distance of 20 cm from all persons.

Declaration of Conformity for RF Exposure:

The radio module has been evaluated under FCC Bulletin OET 65C and found compliant to the requirements as set forth in CFR 47 Sections 2.1091, 2.1093, and 15.247 (b) (4) addressing RF Exposure from radio frequency devices.

Radio Frequency Interference Requirements

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: 1) this device may not cause harmful interference, and 2) this device must accept any interference that may cause undesired operations.

CAUTION:
The Part 15 radio device operates on a non-interference basis with other devices operating at this frequency when using the listed antenna.

Collocation Statement:
This device must not be collocated with any other antenna or transmitters.

Radio Frequency Interference Requirements - Canada

This device complies with RSS 210 of Industry & Science Canada. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.
This Class A digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations.
Cet appareil numérique de la Classe A especte toutes les exigencies du Reglement sur le Materiél Brouilleur du Canada.

European Economic Area

The European variant is intended for use throughout the European Economic Area, however authorization for use restricted as follows:
European standards dictate maximums radiated transmit power of 100 mW EIRP and frequency range 2.400 –2.4835 GHz.
France, the equipment is to be restricted to the 2.4465 – 2.4835 GHz frequency range.
Belgium outside, the equipment is to be restricted to the 2.460 – 2.4835 GHz frequency range.
Operation in Italy requires a user license.

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INSTALLING THE PRINT SERVER HARDWARE

1

The Paxar® Monarch® 7410™ Print Server lets you communicate with Paxar® Monarch® printers on an 802.11b wireless network. You can use the print server in ad-hoc (peer-to-peer) or infrastructure (access point) wireless mode. The print server operates at speeds of up to 11 Mbps on any IEEE 802.11b wireless compatible network.

The Paxar® Monarch® 985x™ printers can be used on the Paxar® Monarch® 9876™ Mobile Printing Station for portable wireless communication.

In addition, the wireless print server includes a unique dual-mode built-in wired Ethernet connection. What does this mean? No more production slowdowns in poor coverage areas; when the RF net is down; or when RF traffic is heavy. Simply move the printer and/or mobile printing station to the nearest Ethernet jack, plug it in, and the print server automatically switches to wired Ethernet mode! Unplug the Ethernet cable and it automatically switches back to RF!

Follow the instructions in this manual to configure the wireless print server for your printer. For more information and software downloads, see Chapter 4, “Troubleshooting.”

System Requirements

To use the print server for printing from a wireless network, you need an 802.11b wireless network. The wireless network consists of either of the following:

- An 802.11b wireless enabled PC printing straight to the printer (Ad-Hoc or Peer-to-Peer Mode).
- An 802.11b wireless Access point allowing wireless and wired Ethernet enabled computers to print to the print server (Infrastructure Mode).

To configure and print, you need the following:

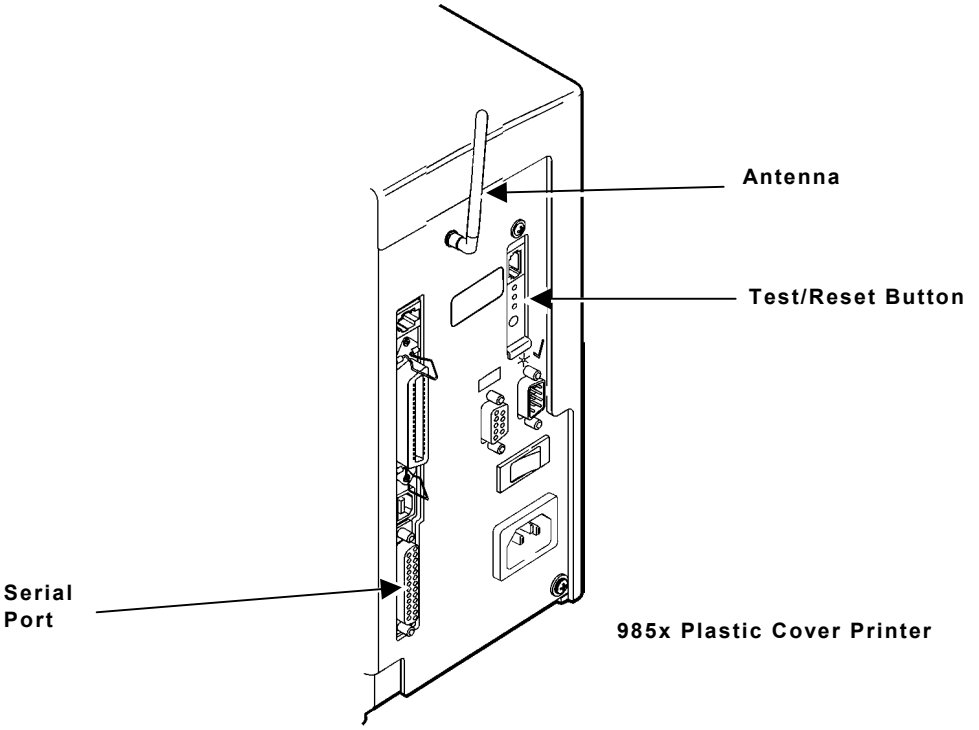
1. The MAC address from the label of the print server (for example: 004017023F96).
2. The following information from your wireless network administrator:
    - Wireless Mode (Infrastructure or Ad-Hoc)
    - The SSID (service set identifier) for your wireless network.
    - If you are using TCP/IP (recommended for Windows Networks) and are not connected to a DHCP server (for obtaining an IP Address automatically), you need a unique IP Address for the wireless print server (for example: 192.168.1.14) and a subnet mask. If the print server is not on the same IP subnet as the computers you are printing from, you need a subnet mask. A router (default gateway) address is optional.

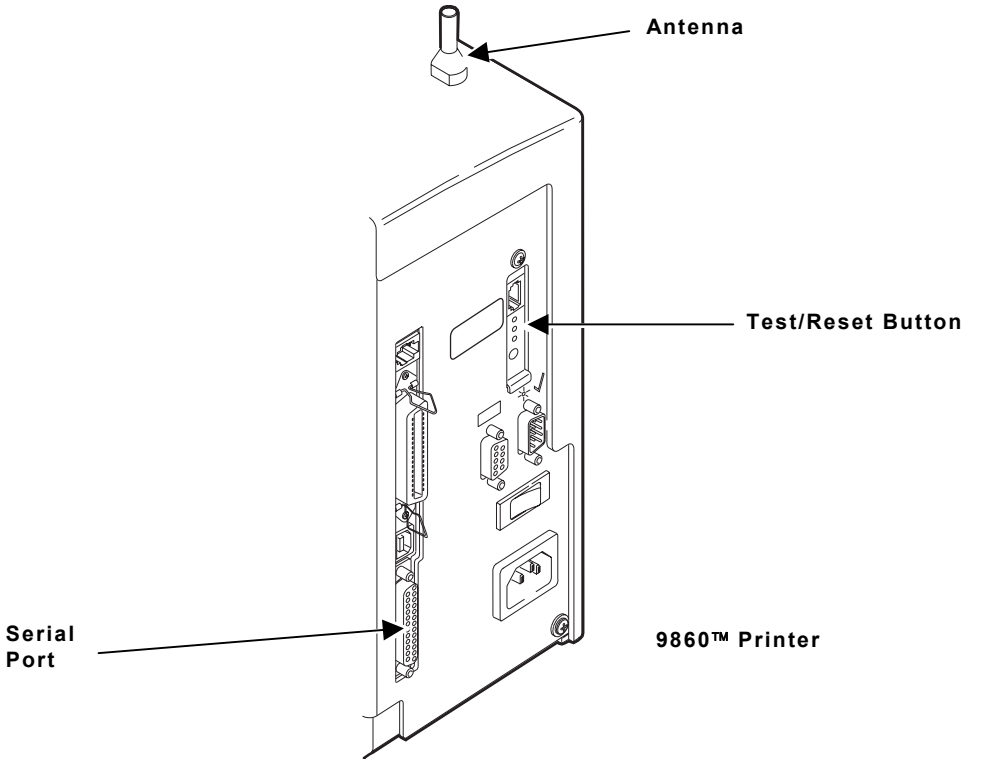
Network Protocols Supported

- TCP/IP:
  LPD/LPR
  Raw TCP/IP (port 9100 or any chosen port)
  NetBIOS over IP (with SMB)
- TELNET
- WINS
- DHCP

Checking the Print Server Hardware

The print server comes preinstalled and tested in your printer. Do not plug any cables into the parallel port when using the print server. A printer with this print server cannot use the parallel port. However, the serial port is still active.





Verifying Successful Installation

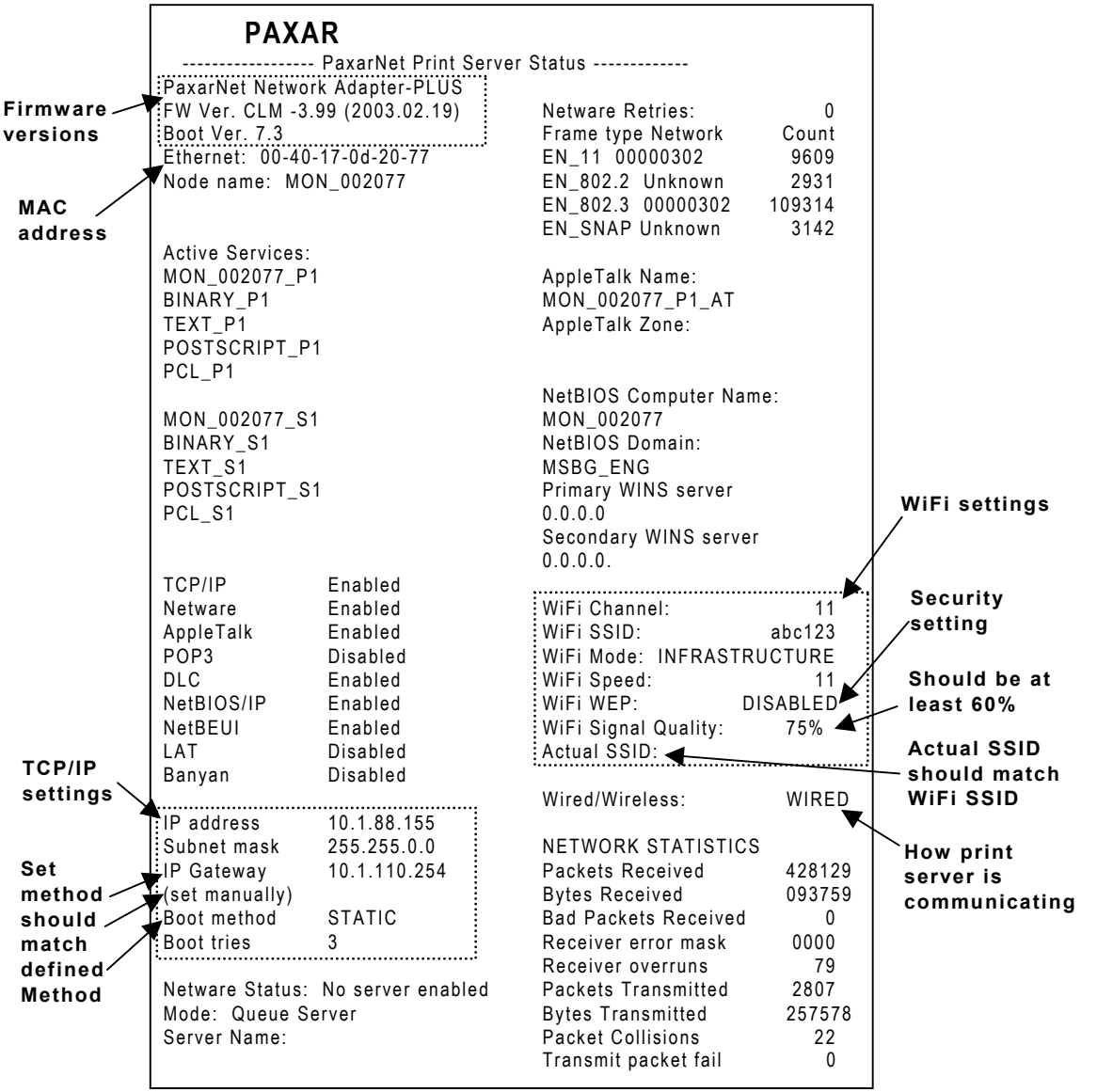
When the print server is turned on, it goes through the following startup sequence:

- It runs through a set of power-up diagnostics for a few seconds. The green light comes on when the unit is turned on, then the green light turns off. The yellow light comes on solid when an Ethernet link (wired) is established. The red light comes on solid when a wireless link is established. The green light blinks during network activity.

Test/Reset Button	Press this button down for less than 5 seconds to print a test page on the printer. The test page shows the current wireless and network settings of the print server. See “Sample Test Page” for more information. If the test page does not print, see Chapter 4, “Troubleshooting.” Press this button down for more than 5 seconds while turned on to reset the print server to its factory default parameters.
LED Status Indicators	The green light comes on when the unit is turned on, then the green light turns off. The yellow light comes on solid when an Ethernet link (wired) is established. The red light comes on solid when a wireless link is established. The green light blinks during network activity.
Antenna	A rugged 802.11b compatible antenna, mounted on the back of plastic-cover printers or on the top of metal-cover printers.

Sample Test Page

The test page is best displayed using 4” wide by 6” long labels. If the label is too small, some information may print outside the label edges.



CONFIGURING THE 802.11B AND IP SETTINGS

2

Configuring the Print Server

There are three basic steps required to configure print server:

1. Configuring the 802.11b settings for wireless usage. To operate on an 802.11b network, you must set the wireless (ad-hoc or infrastructure), SSID, channel, data rate and WEP encryption. All nodes of a wireless network need to have the same settings in order to communicate with each other.
2. Configuring the IP address settings. You need to set the IP address, subnet mask, and router address if you are using TCP/IP, NetBIOS IP, or if you want to use the Web Browser management utility.
3. Configuring the print server for operation with the network operating systems. Configure the print server to print using one or more network operating systems (for example, Windows NT/2000, NetWare, etc.).

Before You Begin

Make sure that you have properly configured your computer for communication on a wireless network. If you are connecting to the device through an access point, make sure your computer is in infrastructure mode and it is associated with the access point. If you are connecting directly to the device without an access point, you should be in ad-hoc mode. See the documentation for your wireless adapter for instructions.

NOTE: If your wireless adapter includes an option for 802.11 Ad-hoc, you must select it if you want to use the printer in ad-hoc mode. If it doesn't include this option, select Ad-hoc Computer-to-Computer, or whatever mode your adapter uses to communicate on a wireless network without an access point.

If you are using WEP (Wired Equivalent Privacy) encryption on your wireless network, you will need to temporarily disable WEP on your PC in order to configure the print server. If you are using an access point with WEP enabled and it does not allow non-wep clients to communicate with other non-wep clients, then you will also need to temporarily change the wireless mode of your computer to Ad-hoc (802.11) mode.

NOTE: If no computers on your network can be set to Ad-hoc mode, you need to temporarily disable WEP on your access point. When you are done configuring the print server, you can re-enable WEP on your computer and change the wireless mode back if necessary.

- If you are using TCP/IP, note your computer's IP address. The print server needs to be on the same IP segment as the other nodes on your network in order to communicate.
- If you are using infrastructure mode, make sure you have a good signal between your computer and the access point. Most wireless adapters have a utility that shows the wireless signal strength. See your wireless adapter's documentation for details.
- If you are using a home gateway or router, you should configure the print server from a PC on the same network segment that you want the print server to be on.

Installing the Software

The following operating systems are supported: Microsoft® Windows® 95, 98, ME, NT® 4, 2000, and XP.

Follow these steps to install the WP-Admin software and configure the print server.

1. Insert the Wireless Configuration CD-ROM into your PC.
2. Click on Install PaxarNet Utilities, then click on Install PaxarNet Configuration Utilities and Printing Software.

NOTE: If you are using Windows and don't have the Java Runtime installed on your system, you will be prompted to install it, click Continue.

3. Follow the on-screen instructions for installing the utility. When WP-Admin starts, you will see the WP-Admin Wireless Server Search screen.

4. Click START to begin searching for print servers. WP-Admin gets the information from the print server(s) and lists the Server Name and Ethernet Address (which should correspond with the label on the back of the print server). It might take a minute or two for the print server to show up, especially if you have a large wireless network. The default name of the print server is XCD_xxxxxx, where xxxxxx is the last six digits of the Ethernet (MAC) address (for example, XCD_08B2C7).

NOTE: If you do not see the print server in the list, hold down the button for more than 5 seconds to reset it to factory defaults and try the search again. If you still do not see it, see Chapter 4, "Troubleshooting."

5. When you see the print server you want to configure in the list, highlight it and click Configure. If you are using DHCP, wait until the print server gets an IP Address from the DHCP server and is updated on the search screen before configuring (the IP address changes from the default 10.1.85.1 to a new value).

NOTE: If the wireless signal is less than 50% on the search screen, printing performance could be affected. To improve the signal strength, try moving the print server closer to the computer or access point and away from other radio devices such as Bluetooth™ wireless devices, microwave ovens, or 2.4 gigahertz cordless phones.

6. You will be prompted for the configuration password (the default password is **access**), type in the password and click OK to continue. The Wireless Server Configuration screen comes up.

NOTE: If you are having trouble configuring a print server, click Cancel to get back to the Search screen, click Clear to clear the list of print servers, and start again from step 4 above.

7. The settings of the print server you selected in the Wireless Server Search screen will be displayed. Many of the fields are automatically configured to match the network being used, so you probably do NOT need to change the Wireless Mode, RF Channel, SSID, and Data Rate settings unless you want to want to change the print server to a different wireless network.

- If your network uses WEP encryption, you need to enable WEP and enter the appropriate WEP key(s). Contact your system manager to determine what information you need.
- If you are using TCP/IP and you do not have a DHCP server (see note below), you will need to manually assign a valid IP Address, Subnet Mask, and Gateway and then set the Boot Method to Static.

8. When you are done configuring, click OK.

NOTE: If you are using DHCP on your network, the print server may have acquired valid IP settings at this point and no further configuration is necessary. This might work well if your DHCP server allows the print server to keep this address permanently, but in most cases, you should use a static address outside the range reserved for DHCP (See your DHCP server documentation for details). This is because when you configure your printer port, it goes to a static IP address.

Your print server should be configured correctly at this point.

MANAGEMENT METHODS 3

There are a variety of ways to configure and monitor the print server. These methods are: WP-Admin, XAdmin32, Web Browser, PaxarNet Console, HP JetAdmin, HP Web JetAdmin, or Telnet. For Telnet/console mode information, see Appendix A, "Telnet Console Commands."

WP-Admin Utility

This utility runs on Windows computers, and is used for initial configuration of the print server and allows you to set the wireless settings as well as the basic network settings including TCP/IP.

See the previous chapter "Configuring the 802.11b and IP Settings" for detailed instructions.

This utility can be downloaded from our web site, see Chapter 4, "Troubleshooting." After initial installation, this utility can be run from the START menu under START>Programs>Troy Group>Etherwind>WP-Admin. The default password is **ACCESS**.

XAdmin32 Utility

This utility runs on Windows computers and is used for advanced configuration of the print server; it allows you to configure for Netware, TCP/IP, and more. It is a 32-bit graphical utility that is compatible with Windows PC's running TCP/IP or IPX/SPX Protocols.

This utility can be downloaded from our web site, see Chapter 4, "Troubleshooting." After initial installation, this utility can be run from the START menu under START>Programs>Troy Group>Etherwind>XAdmin32. The default password is **ACCESS**.

Web Browser

This utility allows the user to configure the print server with a standard web browser like Netscape Navigator or Microsoft Internet Explorer. No additional software is needed on the system. It can be used on any system that supports web browser capabilities.

Simply type the IP address into your web browser address bar to connect. The default password is **ACCESS**.

NOTE: Both the print server and the PC must be configured with an IP address and your browser must be configured to work across a LAN in order to use a Web Browser.

PaxarNet Console

This is a command-line oriented console that contains features not available through WP-Admin, Xadmin32 or a Web Browser. The default password is **ACCESS**.

The console can be accessed via:

- TELNET
- Web Browser

NOTE: Enter the IP address in the browser. When prompted to enter password, type **ACCESS**. On the network configuration main menu, select Console. The screen allows you to enter console commands. See Appendix A, “Telnet Console Commands,” for more information.

HP JetAdmin Utility

This HP Windows-based utility (works transparently with JetAdmin) can be downloaded from the HP web site (http://www.hp.com).

NOTE: The print server will not appear in the list of configured servers unless TCP/IP or IPX is running on the computer.

HP Web JetAdmin Utility

This HP utility for Windows NT Advanced Server and Windows 2000 can be downloaded from the HP web site (http://www.hp.com). Once it is installed, a web browser on any computer that has access to the Windows NT/2000 server may be used to access the print server.

Microsoft® Windows® Network Configuration

The print server includes the easy-to-use ExtendNet Connect IP Monitor software for printing from Windows computers over an 802.11b wireless link. This software creates a network port on the Windows system, which acts like a normal parallel port. As a result, it works transparently with any standard Windows printer driver and application program. Because this software uses the industry-standard TCP/IP protocol, it can be used with IP routers and other IP-based equipment.

Installing ExtendNet Connect

1. Install the ExtendNet Connect IP Port Monitor by inserting the CD, selecting Install PaxarNet Utilities, then Install ExtendNet Connect Port Monitor. Follow the on-screen instructions to complete this installation.
2. Install the printer driver software according to the documentation for the printer.
3. Click the Windows Start button, select Settings, and then Printers.
4. Right-Click on the printer you wish to associate with the network port, and select Properties.
5. If you are using Windows NT/2000/XP, go to the Ports tab. If you are using Windows 95/98/ME, go to the Details tab.
6. Click on Add Port.

7. If you are using Windows NT/2000/XP system, highlight Paxar Group ExtendNet Connect IP Monitor, and click New Port.
   If you are running Windows 95/98/ME, select Other, highlight Paxar Group ExtendNet Connect IP Monitor, and click OK.

8. The search will begin for available print servers, highlight the print server you would like to create the port for, and click ADD.

9. Make sure the port you created is chosen and click Apply.

   You are now ready to print.

Additional Windows Configuration Methods

The print server is also compatible with other methods of printing from Windows. These include the Standard TCP/IP Port option in Windows 2000/XP, and the LPR Port option in Windows NT that are built into the operating system.

UNIX Network Configuration

The print server appears to the network as a UNIX host computer with a unique IP address running the line printer daemon (lpd) protocol. As a result, any host computer that supports the Berkeley remote-LPR command can spool jobs to the print server without the need for any special software on the host computer.

NOTE: Before configuring a UNIX print queue, the print server must have a valid IP address.

Berkeley UNIX Host Configuration

Berkeley UNIX host computers include Linux, Digital Equipment Corporation Digital UNIX, OSF/1, and ULTRIX; Compaq Tru64 UNIX; SunOS (not Solaris), SCO UNIX; and many others. Sun Solaris, HP/UX, IBM AIX users should skip to the appropriate sections later in this manual.

- Do not use the Linux X-Windows graphical user interface printer configuration utility, because it does not work with Paxar print servers. Instead, Linux users should follow the configuration steps listed in this section.
- SCO UNIX users should use the rlpconf command to create a printer and automatically configure the /etc/printcap file (you will still need to edit the /etc/hosts file). Enter the print server's service name (XCD_xxxxxx_P1) as the name of the printer (refer to the print server self-test for the exact name of this service), and enter the name of the print server that you assigned in the /etc/hosts file as the remote host name; note that because this name must be unique for each printer, we recommend using the XCD_xxxxxx_P1 service instead of the normal BINARY_P1 service.

1. Edit the /etc/hosts file: (or equivalent local host table). For example:

```
192.189.207.33    xcdprinter
```

2. Edit the printcap file: An example of a typical entry in the printcap file is:

```
PaxarPrinter:\
:lp=:\
:rm=XCD:\
:rp=BINARY_P1:\
:sd=/usr/spool/lpd/PaxarPrinter:
```

"PaxarPrinter" is the queuename.

"XCD" matches the name in the hosts file.

"BINARY_P1" is the print server's service name.

NOTE: Use TEXT_P1 instead of BINARY_P1 for text files.

"sd" is the spool directory.

3. Create the spool directory: The lpd spool directory is usually located in the /usr/spool directory. To create a new spool directory, use the mkdir command; for example:

```
mkdir /usr/spool/lpd/PaxarPrinter
```

4. Print using the standard lpr command:

```
lpr -PPaxarPrinter  filename
```

5. For AT&T based UNIX systems, such as SCO, use the standard lp command:

```
lp -dPaxarPrinter  filename
```

Sun Solaris Configuration

To use a print server with Sun Solaris, first use the Host Manager in the Admintool utility to add the print server IP address and name to the /etc/hosts file.

1. Click on None - Use /etc files on host
2. Click on Apply
3. Click on Edit and then Add Host
4. Enter the print server name as the Host Name (this name is anything you want, but should not have an "_" character in it).
5. Enter the IP address and Ethernet address of the print server (the Ethernet address has the format aa:bb:cc:dd:ee:ff)
6. Click Add and then close the Host Manager windows

7. Then use the Printer Manager in the Admintool utility under Open Windows as follows:
   Select Edit
   Select Add
   Select Add Access to Remote Printer
   At the PrinterName prompt, type any desired name for the print queue
   At the Printer Server prompt, type:

   `name\!servicename`

   (for example, PaxarPrinter\!BINARY_P1), where:

   name matches the print server name as entered in the host's table.

   servicename is the print service name. For binary graphics files use the service BINARY_P1; for text files use the service TEXT_P1.

8. Make sure that the Print Server OS is set to BSD (this is the default setting).

9. Select Add.

10. To print, use the standard lp command; for example:

    `lp –dPaxarPrinter filename`

NOTES:

- We recommend using the /etc/hosts file for the printer name rather than NIS or other name services.
- Due to a bug in the Sun lpd implementation on Solaris 2.4 and earlier releases, may cause problems printing very long print jobs. The workaround is to configure the print server as an HP JetDirect card using the HP JetAdmin for UNIX software.
- Solaris print queues can also be configured from the UNIX shell using the lpadmin command.

HP/UX Configuration

To configure a print server using HP/UX 10.x, use the same program and these steps:

1. When you get a list of options, select Printers and Plotters.
2. Select LP Spooler.
3. Select Printers and Plotters.
4. Select Actions and then Add Remote Printer/Plotter.
5. Enter any name as the Printer Name (this will be the name of the print queue).
6. Enter the IP address of the print server as the Remote System Name.
7. Enter the desired print server service name (BINARY_P1 for binary files or TEXT_P1 for text files) as the Remote Printer Name.
8. Check the box next to Remote Printer is on BSD System.
9. You may accept the default values for the remaining items.
10. Click OK to configure the printer.
11. You should now be able to print using the lp -d command with the printer name.

NOTES:

- The configuration for HP Distributed Print Services and for earlier versions of HP/UX is slightly different.
- The print server can also be configured as a JetDirect card using HP/UX. To do this, you will need the HP UNIX Host Printing Software (part of HP's JetAdmin for UNIX).

IBM AIX Configuration

To configure a print server on IBM AIX 4.x, use the SMIT program as follows:

1. Enter smit and select Devices.
2. Select Printer/plotter.
3. Select Manage remote printer subsystem.
4. Select Client services.
5. Select Remote printer queues.
6. Select Add a remote queue. Enter the following remote queue settings:
   - Name of queue to add (user selectable).Activate the queue (Yes).
   - Destination host (print server's IP address; or if you have configured the /etc/hosts file, use the name of the print server that you specified in that file).
   - Name of queue on remote printer BINARY_P1 for binary files or TEXT_P1 for text files).
   - Name of device to add (user selectable; for example lp0).
7. You should now be able to print using the normal lp -d command.

NOTES:

- The configuration for earlier versions of AIX is slightly different. Refer to the Administrator's Manual on the CD-ROM for details.
- The print server can also be configured as a JetDirect card using AIX. To do this, refer to your AIX documentation.

Configuration on Other Systems

The print server can be used with any computer system that supports the lpr/lpd protocol or HP JetDirect (port 9100 is the default; however, it can be reconfigured). Refer to the system's documentation to configure lpr/lpd or JetDirect print queues.

TROUBLESHOOTING 4

First, make sure the printer is operating properly:

1. Is the printer online and does it have supplies?
2. If the printer is working correctly, test the connection between the printer and the print server by pushing the test button on the back of the printer for less than 5 seconds.
3. If the test page does not print, try resetting the print server to factory defaults by holding the test button for more than 5 seconds.

General Troubleshooting Information

Use the following information if your 7410™ print server is not operating properly.

1. Verify that the printer is turned on.
   If the printer is on a Paxar® 9876™ Mobile Printing Station (cart), the cart power **AND** the printer must be turned on. The print server does not function when the printer is turned off.
2. Verify the print server is functioning.
   When the printer is turned on, the print server goes through the following startup sequence:

   It runs through a set of power-up diagnostics for a few seconds. If the print server is operating properly, all three LEDs blink momentarily and then go out. Then, the LEDs come on to indicate the following activity:

   Yellow LED = Ethernet Link
   Green LED = Activity
   Red LED = Wireless Link
3. Print a test label (see sample on last page).
   Press the print server button for about a second and a label should print.

Use 6-inch long supply. If you are using supply that is shorter than 6 inches long, temporarily change your supply type to “continuous” to print the entire test label. After printing the test label, change your supply type to your previous setting.

If a label does not print, check the printer's display to see if it shows a receiving status. If so, press **Escape** to exit receiving mode. Once you see “Online Ready” on the display, print a test label again. If this does not print or the printer does not display “Online Ready,” the unit is locked up. Turn off the printer, wait fifteen seconds and then turn it back on.

If the printer displays “Online Ready,” but is not printing, verify that the parallel port settings did not change. The Parallel Port setting should be “Internal” and the Mode setting should be “IEEE1284”. (From the Main Menu, select Setup, Port Settings, Parallel Comm., Port and Mode.)

4. On the test label, verify your IP and WiFi settings. If using an Ethernet cable, the “Wired/Wireless:” value should be “WIRED”. If using RF, the setting should be “WIRELESS”.

Check the “Actual SSID” and the “WiFi Sig Qual”. Is the actual SSID correct? Is the signal quality greater than zero? If the signal quality is 0, you lost connection with the access point. If it is very low, you may be experiencing interference or are very close to being out of range or an access point. A value of 100 is the best you can have for signal quality. You can probably operate at a minimum of 60, but the number of retries is likely to increase.

5. Ping the printer.
If you can ping the printer, it is at least "seen" on the network. If you cannot ping the printer, then ping every device in the path to the printer - access points, routers, etc. If you can ping every device but the printer, the printer needs to be turned off and back on. If some device in the path to the printer cannot be pinged, that device needs attention.

ping <ip address> (i.e. ping 10.1.88.150)

6. Telnet to the printer.
Once you have verified connectivity, telnet to the printer using port 23 (console). This gives you access to console operation of the printer.

Press Enter (on your host) to get the "#" prompt and enter "access" as the password. Press Enter to by-pass the user name. Once here, you have verified operation to the print server. At the "Local>" prompt, you can do a ping from the print server to any other device by typing

set ip ping aa.bb.cc.dd

This verifies that the print server can initiate communications. If this fails, the destination IP address has problems.

Verify connection to the data port by starting a telnet to the printer using port 9100. If this fails, some other device has the session in use. Either terminate the other connection or turn off the printer and turn it back on. If the connection succeeds, type

Ctrl-E

This sends an ENQ request. The printer responds with 3 characters. Depending upon the telnet being used, you may not see the first character, as it is a hex 05 value. The other two characters are ASCII characters.

You will see

A@

which means the printer is online and waiting. Alternatively, you can type

{J,2}

The printer responds with **{J,0,0,"","}**.

NOTE: The **J** must be capital.
If you do not get any response, the printer may have an open session to some other connection. Either terminate the other connection or turn off the printer and turn it back on.

7. Perform a factory reset on the print server.
If the printer is not initializing correctly (verified by printing a test label from print server), perform a factory reset. Press the print server button while turned on and hold for about 10 seconds. The unit reinitializes with the factory-set defaults and then reboots. Verify with a test label to see if the unit is now correctly set.
If the print server is pre-configured by Paxar for the customer, the default values should represent the customer's defaults.

Troubleshooting Wireless Configuration Problems

1. Make sure your computer's wireless adapter and/or access point is configured properly and matches your print server.

2. Make sure you have a good wireless signal from your PC (if your PC is wireless) and from the print server, the printer is within range (90 meters or 300 feet), and it is away from metal objects and other devices with radio signals (Bluetooth™, 2.4 GHz cordless phones, and microwaves).

3. Make sure your computer is set to infrastructure mode if you are connecting through an access point, or ad-hoc (802.11) if you are connecting to the print server without an access point. Refer to the documentation for your wireless adapter for details.

4. If you are using WEP (Wired Equivalent Privacy) encryption or security on your wireless network, you need to temporarily disable WEP on your PC in order to configure the print server. If you are using an access point with WEP enabled and it does not allow non-wep clients to communicate with other non-wep clients, then you also need to temporarily change the wireless mode of your computer to Ad-hoc (802.11) mode.

NOTE: If no computers on your network can be set to Ad-hoc mode, you need to temporarily disable WEP on your access point. When you are done configuring the print server, you can re-enable WEP on your computer and change the wireless mode back if necessary.

5. If you want to use WEP encryption or password protect your wireless network, and your wireless adapter or access point normally uses a password or passphrase instead of WEP, it should allow you to enter 0x followed by a ten digit (for 40-bit or 64-bit WEP) or twenty-six digit (for 128-bit WEP) key in hexadecimal format (0-9 or A-F).

6. If you are experiencing slow performance or are having intermittent problems connecting, try changing the RF channel of your wireless network (ad-hoc mode only). This can be done in the WP-Admin Wireless Server Configuration screen for the print server. Refer to your wireless adapter and/or access point documentation for more information. You should change it to at least 3 channels lower or higher than any other wireless networks within range.

Troubleshooting Network Configuration

- If you are using TCP/IP, make sure that your computer and the print server are on the same IP segment or can reach each other with a PING command from the host. The IP Address you assign to the print server must be on the same logical network as your host computers (e.g., if your computer has an IP address of 192.189.207.3, the print server should have an IP of 192.189.207.x, where x is an integer between 1 and 254), or you must properly configure your router address to work with the print server.
- If your print server is set to Auto or DHCP for obtaining an IP Address, it is possible the print server's IP Address can change. Either configure your DHCP Server to give the print server a permanent lease or configure the print server to be on a STATIC address outside the scope of DHCP addresses.

Wireless Server Configuration Screen Fields

Listed below is a description of each of the fields displayed on the Wireless Server Configuration screen and reasonable values for that field. Once these are all set, click OK to close the Configuration Screen and write the changes to the Server. If you decide NOT to CHANGE the values, select CANCEL to close the Configuration Screen and revert to the prior values.

Name	This is the name of the wireless print server. The default is XCD_xxxxxx (where xxxxxx are the last six digits of the MAC/Ethernet address). You can choose any name for this setting. Many companies have suggested naming practices; check with your System Administrator or Network Manager for policies and practices.
Serial Number	This is the fixed number which identifies the print server. It is set during manufacture and does not change after that.

Password	This is the wireless print server configuration password. For security, the password is never shown. (The field displays asterisks (*) if you type characters into it.) You must know the password before WP-Admin will show you the Configuration Screen. Users should only put text into this field if they want to change the password. Ask your System Administrator or Network Manager for the correct password; be sure the Administrator/Manager is informed and concurs BEFORE the password is changed.
Firmware Revision	This is a static string displaying the correct version of the software embedded in the Server. It can not be modified.
IP Address	The IP Address is a set of four bytes, separated by periods. Each byte can have any value between zero (0) and 255 inclusive. Most company networks have ranges for their IP Addresses. Many have automatic IP set-up, so the IP address may not require configuration. Consult with your network administrator if you are not sure what to put in this field.
WorkGroup/ Domain	This is the Microsoft Network WorkGroup or Domain in which you want the print server. If you are using NetBIOS or NetBEUI to print, this value should match the PC from which you are printing.
Subnet Mask	Companies often have ranges of IP Addresses that can be described by one or more Masks. For example, a mask of 255.255.255.0 allows variation in the last position only. (The first three positions are fixed. The last position can be any value between 1 and 255.) Larger organizations may have masks of 255.255.0.0 -- the first two positions are static and the last two positions are variable. If the IP Address is set automatically, this mask may also be defined automatically.

Boot Method This is the method the wireless print server uses to obtain an IP address. This can be set to Auto, DHCP, BOOTP, RARP, or Static. Auto will try DHCP, BOOTP and RARP, and then set to Static if the IP Address isn't set automatically by the other methods. If your network uses Static configuration, it will be necessary to set the Boot Method to Static and the IP to a particular address.

Gateway (or Router) The Gateway or Router allows connections between different subnets. For example, if a corporation has separate subnets for the Hardware Department, the Software Department, and the Testing Department, they will need a Gateway between subnets to allow the separate groups to communicate.

RF Channel The RF Channel is the wireless channel the print server uses to communicate. The print server will be able to automatically configure itself in most cases, but you might need to manually set it to the same RF channel as the 802.11b wireless network. This value must match for all nodes on a network to communicate with each other.

MAC Address This series of six numbers, separated by periods, defines the Ethernet address of the Server. For the print servers, the MAC Address is set during manufacturing and will not change. (This should avoid problems caused by multiple devices on an Ethernet network with the same address.)

Data Rate This is the throughput speed in Mbps of the wireless Ethernet connection (1, 2, 5.5, or 11). In most cases with an 802.11b wireless network, it should be set to 11 Mbps. The Data Rate usually does not need setting as it will automatically negotiate to the highest possible rate.

SSID This is the Service Set Identifier (Sometimes referred as Network Name or ESSID). This value must match for all nodes on a subnetwork to communicate with each other.

Wireless Mode

Ad-Hoc (sometimes referred to as Peer-to-Peer, Computer-to-Computer, 802.11 Ad-Hoc, or IBSS compliant Ad-Hoc) modes are used when your wireless enabled PC is printing straight to the printer.

Infrastructure mode is used when you have an Access point or base station as the hub of your wireless network.

Pseudo Ad-Hoc is only used for testing and some older 802.11b implementations of Ad-Hoc. Auto mode attempts connection with each of the other methods in turn.

NOTE: If the options on your 802.11b enabled computer are Ad-Hoc, 802.11b Ad-Hoc, and Infrastructure, use the following to determine the settings of the print server:

Computer	Print Server
Ad-Hoc	Pseudo Ad-Hoc
802.11 Ad-Hoc	Ad-Hoc (802.11)
Infrastructure	Infrastructure

WEP Key

Disabled. The other Options are 64Bit WEP Key Size and 128Bit WEP Key Size. Be careful -- if one part of the wireless network has WEP enabled, they all must have it enabled with the same key or they cannot communicate.

WEP Key Index

This is which WEP key you want to use out of the 4 entered in the 128 / 64 WEP Key field.

128 Bit / 64 Bit WEP Key

This is the 64 or 128 bit WEP key that must match other nodes' encryption keys in order to communicate: 10 characters for 64 bit, or 26 characters for 128 bit. The print server uses a Hexadecimal value for WEP. All 802.11b devices have a way of translating their WEP or Security values to 10 (for 40-bit or 64-bit WEP) or 26 (for 128-bit WEP) digit HEX values. Ask the manufacturer of your wireless product how this is done for your PC and/or Access Point.

Loading the Firmware

Early versions of the software may have menus which differ slightly from those listed below.

1. Run the XAdmin32 utility from the Start menu, it should be found under START>Programs>Troy Group>Etherwind>XAdmin32.
2. Right-Click on the print server to be upgraded in the list, and select Load Firmware.
3. If you are using TCP/IP to upgrade, select TFTP PUT from this host. If you are upgrading using IPX/SPX on a NetWare network to upgrade, select Netware GET from a server (If you are using Netware to upgrade, you need to put the .bin firmware file in the LOGIN directory of the Netware server). Click OK.
4. If you selected TFTP PUT from this host in step 3, enter the configuration password (default is **ACCESS**) and click Browse to find the .bin firmware file you downloaded. Click Load. The firmware on your print server will be upgraded to the new version.

   If you selected Netware GET from a server in step 3, enter the configuration password (default is **ACCESS**). Enter the name of the Netware server where you saved the .bin file as the Host Name. Enter the name of the firmware file for File. Click OK. The firmware on your print server will be upgraded to the new version.

Software Versions

Certain versions of software and firmware may use different terms than those shown in menus throughout this manual.

Older Software	Newer software
EtherWind	PaxarNet
Troy Group	Paxar Group

Technical Support - Where to Get Help

We offer several customer support options to assist you if you experience difficulties with your print server-equipped Paxar printer and/or 9876 Mobile Print Station; including telephone support, field systems consultants, repair services, warranty, and network support. Contact Paxar for any printing, battery, or label supplies issues with your printer or mobile printing station. See your Paxar sales representative for details of your support agreement.

TELNET CONSOLE COMMANDS A

Use this appendix to configure the print server using Telnet. You must have a basic understanding of Telnet commands. For initial setup, do not use Telnet. Use Auto-discover mode. Once you have the IP address, you can use Telnet or a Web browser.

You can use Telnet if you do not have access to the WP-Admin software.

NOTE: The default port is Port 23.

To reset the unit back to factory defaults, press and hold the black button on the print server card for about ten seconds. The LEDs will temporarily turn off and then back on, indicating the unit is resetting.

To access Telnet console mode:

1. Start Telnet.
2. Press Enter (on your host) until you see the "#" prompt.
3. Type "access" as the password and press Enter. ("Access" is the default password.)
4. Press Enter to by-pass the user name. You do not need to enter a username.

5. To view the current wireless settings, type **sh en** (show wireless settings)
   and press **Enter**:

```
WiFi Mode = INFRASTRUCTURE
WiFi SSID:  ABC1234
Speed = 11
AP density = LOW
WEP is DISABLED
AP MAC ADDRESS = 00 B1 F3 62 B1 88
Signal Quality = 68
Connected to SSID ABC1234 on channel 1
```

6. To show the current IP settings, type **sh ip** (show TCP/IP settings) and press **Enter**.

```
IP is enabled
IP address      10.5.192.192      Boot tries      3
Subnet mask     255.255.0.0       Boot method     DHCP
IP Gateway      10.5.156.254      Max window      10240
 (via DHCP      10.62.5.10)
LPD banner      disabled          Timeout         0 min
LPD retries are disabled          Keepalive       1 min
```

7. To change the SSID, type **set en ssid testsystem** and press **Enter**.

8. To set the IP address, type **set ip ad 10.10.302.192** and press **Enter**.

9. To set the subnet mask, type **set ip sub 255.255.255.0** and press **Enter**.

10. Type **INIT** and press **Enter** to save the settings and initialize the unit.

11. Type **Exit** to exit Telnet.

See the following tables for a list of the most frequently used commands.

General Commands

From the list of commands, the brackets - [] indicate to pick one of the options listed, the items inside curly braces - {} are optional and do not need to be specified.

For help at any time, type “Help” and a list of available commands appears. The Help command builds on itself, because for each command you type, more details appear for each option.

Syntax: **Help set**

DEFAULT	**Set parameters to factory defaults**
Enet	**Ethernet Parameters**
LOAd	**Firmware update parameters**
PAssword <password>	**Set console password**
PORT <name>	**Parameter for port <name>**
PROtect <password>	**Set update password**
SERVEr	**Server and LAT parameters**
SERVIce <name>	**Service Parameters**
SNMP	**SNMP Variables**
STRing n "..."	**BOT/EOT string**
NETWare	**Netware Parameters**
APPletalk	**AppleTalk Parameters**
IP	**LPD/TCP Parameters**
POP3	**POP3 Parameters**
SMTP	**SMTP Parameters**
DLC	**DLC Parameters**
NetBEUI	**NetBEUI Parameters**
NetBIOS	**NetBIOS Parameters**

Displays a list of the available help commands for “Set.”

Syntax: **Help set ip**

```
IP                      LPD/TCP Parameters
ACcess                  [EN/DI/ALL] aa.bb.cc.dd {MAsk
ee.ff.gg.hh}
ADdress   aa.bb.cc.dd  IP node address
ARP [EN/DI]             IP set via ARP
BAnner [EN/DI]          LPD banner printing
CHKSUM [EN/DI]          IP receive checksum
BOot n                  Number of DHCP/BOOTP/RARP tries
ENable/DISable          Enable or Disable IP Processing
FTIme  [EN/DI]          Fast timeout
KEepalive n             Keepalive interval (min)
MEthod <type>           Set method of getting IP address
PIng aa.bb.cc.dd        Test connection to IP host
PRObe [EN/DI]           TCP connection probes
RArp flags nn           1=no subnet, 2=no router, 3=neither
REtry [EN/DI]           LPD retry continuation
ROuter aa.bb.cc.dd      Default router address
SUbnet aa.bb.cc.dd      Subnet mask
TImeout n               Inactivity timeout (minutes)
WIndow nn               LPD/TCP maximum window size
```

Displays a list of the available help commands for “Set IP.”

CHange

Changes configuration items.

CLear FAtal

Deletes fatal error log.

CLear PAssword

Removes console password.

CLear POrt portname JOB

Clears current entry in the print server's internal queue for the specified portname (P1 for the first parallel port, S1 for the first serial port, P2 for the second parallel port, and S2 for the second serial port).

CLear SERVEr STRing n

Removes BOT/EOT string.

DEfine

Defines configuration items.

DElete
Removes configuration item.

EXIT
Exits console mode.

HELP
Displays the list of available commands.

INIT
Saves settings and initializes unit.

PUrge
Removes configuration item.

SAVE
Saves configuration settings.

SET DEFAULT
Sets print server to factory defaults.

SET LOAD [EN/DI]
Enables or disables firmware reload after exit.

SET LOAD HOst <name>
Sets node name of boot host (NetWare firmware load).

SET IP aa.bb.cc.dd
Sets IP address of load host (TCP/IP firmware load).

SET LOAD SOftware <filename>
Sets host firmware filename to load.

SET LOAD XModem
Begins XMODEM serial download of new firmware.

SET PAssword <password>
Sets console password (default is ACCESS).

SET PORT <parallelportname> BIDir [EN/DI]
Enables or disables bi-directional communications on specified portname.

SET PORT <parallelportname> DMA [EN/DI]
Enables or disables dma support on parallel port.

SET PORT <parallelportname> FSTB [EN/DI]
Enables or disables fast strobe mode support on parallel port.

SET PORT <parallelportname> NBUF [EN/DI]

Enables or disables no buffer support on parallel port.

SET PORT <serialportname> FLow [NO/XO/CT/DS]

Sets serial flow control to NONE, XON/OFF, CTS, or DTR.

SET PORT <serialportname> PArity <parity>

Sets serial port parity to NONE, EVEN/ODD, MARK, or SPACE.

SET PORT <serialportname> SPeed <baudrate>

Sets serial port baud rate.

SET PORT <serialportname> STop [1/2]

Sets serial port stop bits per character.

SET PROtect <password>

Sets console protection password to prevent access to SET commands. (Use UNPROTECT to access SET commands.)

SET SERVEr DEscription

Sets mode description to string displayed with SHOW SERVER command.

SET SERVIce <servicename> <protocol> [EN/DI]

Enables or disables specified protocol on specified service.

SET SERVIce <servicename> NAme <newname>

Changes service name.

SET SERVIce <servicename> POrt <portname>

Changes service port <portname> is P1 for the first parallel port, S1 for the first serial port, P2 for second parallel port, and S2 for the second serial port.

SET SERVIce <servicename> REceive [EN/DI]

Sets receive only mode on specified service.

SET SERVIce <servicename> TCP nn

Sets TCP port number of service.

SHOw FRee

Shows memory available.

SHOw LOAd

Shows firmware update parameters.

SHOw POrt <name> STA

Shows current port status.

SHOw SERVEr

Shows server parameters.

SHOw SERVEr COunters

Shows server statistics.

SHOw SERVEr QUeue

Shows print server internal queue.

SHOw TEstpage

Prints test page.

SHOw VErsion

Shows server firmware version.

UNPROTECT

Allows temporary access to SET commands when console is in protected mode. Use SET DEFAULT to permanently disable protected mode.

ZEro

Zeros statistical counts.

802.11b Wireless Commands

SET ENet

802.11b Wireless Settings:

SET ENet APDEN [LOW/MED/HI]

802.11b access point density.

SET ENet AUTHtype [OPEN/SHARED]

Authentication type.

SET ENet CHannel nn

Sets 802.11b wireless channel.

SET ENet KEY# <1/2/3/4>

Sets which WEP key number to use (default is 1).

SET ENet KEYVAL <wepkey>

Sets WEP key value. Must be hexadecimal.

SET ENet MODE [IN/AD/PS]

Sets 802.11b wireless mode to infrastructure, ad-hoc, or pseudo ad-hoc.

SET ENet SPeed <1/2/5/11>

Sets 802.11b wireless speed in Mpbs.

SET ENet SSID "<ssid>"

Sets 802.11b wireless SSID. Use quotes if there is a space in SSID. This is case sensitive.

SET ENet WEP [DI/64/128]

Sets wired equivalent privacy encryption level to disabled, 64-bit, or 128-bit.

TCP/IP Commands

SET IP [EN/DI]

Enables or disables IP processing

SET IP ACcess [EN/DI]aa.bb.cc.dd [Mask ee.ff.gg.hh]

Allows or prevents specified IP address from accessing print server.

SET IP ADdress

Sets IP address of print server.

SET IP BAnner [EN/DI]

Enables or disables trailing banner for LPD jobs.

SET IP BOot n

Sets number of retries (n) for DHCP, BOOTP, RARP

SET IP CHKSum [EN/DI]

Enables or disables IP receive checksum

SET IP FTime [EN/DI]

Enables or disables fast timeout

SET IP KEepalive n

Sets keep alive interval (n) in minutes

SET IP MEthod [AUTO/BOOTP/RARP/STATIC]

Sets method of getting IP address.

SET IP PIng aa.bb.cc.dd

Tests connection to IP host.

SET IP PRObe [EN/DI]

Enables or disables the TCP connection probe.

SET IP RArp nn

1 no subnet
2 no router
3 neither
Default - IP address is set with subnet mask and router that is same as address of host.

SET IP REtry [EN/DI]

Enables or disables LPD retry continuation

SET IP ROuter aa.bb.cc.dd

Sets default Router/Gateway address (or access point).

SET IP SUBnet aa.bb.cc.dd

Sets default Subnet mask.

SET SERVIce <servicename> IP [EN/DI]

Enables or disables TCP/IP jobs on specified service.

SET SERVIce <servicename> TCP nn

Sets TCP port number (>1023 on service).

SET IP TImeout n

Sets timeout (n) in minutes.

SET IP WIndow nn

Sets the LPD/TCP maximum window size

SNMP Commands

CLear SNMP CONtact <string>
Removes SNMP SysContact.

CLear SNMP LOCation <string>
Removes SNMP SysLocation.

SET SNMP GETCOMM <string>
Gets SNMP community.

SET SNMP SETCOMM1 <string>
Set SNMP community 1 name.

SET SNMP SETCOMM2 <string>
Set SNMP community 2 name.

SET SNMP CONtact <string>
Set SNMP SysContact.

SET SNMP LOCation <string>
Sets SNMP SysLocation.

SET SNMP JETADmin [EN|DIS]
Enables or disables JetAdmin.

For supplies, service, or assistance call toll free:

1-800-543-6650 (USA)
1-800-363-7525 (Canada)
44 1279 786777 (UK)
45 14 67 00 (France)
49 5731 78060 (Germany)
34-93 746 43 10 (Spain)
01 800 300 72927 (Mexico)
55 (47) 338 2396 (Brazil)
61 2 9647 1833 (Australia)
852-2328-9949 (Hong Kong)
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